



Communicable Disease and Epidemiology News

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• **LOCALLY ACQUIRED TYPHOID FEVER**

• **PERTUSSIS ON THE RISE**

Investigation of Two Cases of Locally-Acquired Typhoid Fever

Cases

In summer 2011, an Asian female with a positive stool culture for Salmonella was reported to Public Health – Seattle & King County (PHSKC). Her symptoms began 7/7/11, with fever, diarrhea, malaise, headache, night sweats and cough. She had no history of travel outside of King County in the two years prior to onset, and reported no contacts with similar symptoms. She did not require hospitalization. Her isolate was sent to the Washington State Public Health Laboratories (WAPHL) where it was determined to be Salmonella Typhi. Because she worked at a restaurant, she was excluded from work until she had three negative stool cultures for Salmonella.

Three days after the initial case report, an Asian male with a positive blood culture for Salmonella was reported. His symptoms began on 7/21/11 and consisted of diarrhea, fever, night sweats, and headache. He had also no recent history of travel outside of King County, or contact with others with similar symptoms. WAPHL confirmed that he had Salmonella Typhi.

Results of pulsed-field gel electrophoresis (PFGE) testing at WAPHL revealed that isolates from the two cases had indistinguishable PFGE patterns that were new to Washington State.

Clinical features

Typhoid fever is a febrile systemic illness caused by *S. Typhi*. Humans are the only reservoir. Symptoms of typhoid fever include fever, headache, malaise, chills, and myalgia; cases may have either constipation or diarrhea. In some cases, infected individuals also develop a rash with rose-colored macules. The incubation period for typhoid fever is typically 8 to 14 days (range 3 to over 60 days), significantly longer than the 1 to 5 day incubation period for non-Typhi *Salmonella*. Diagnosis is by identification of *S. Typhi* in stool, blood, or any normally sterile site.

Epidemiology

Typhoid fever is typically spread by consumption of contaminated food or drink. The greatest risk is

among those who live in or travel to Asia, Africa, and Latin America. In a review of cases reported in the U.S. from 1994 to 1999, six countries accounted for three-quarters of travel-associated cases: India, Pakistan, Mexico, Bangladesh, the Philippines, and Haiti.

Between 2 and 15 cases of typhoid fever in King County residents are reported each year. Recent years have seen a significant increase in cases among people traveling to India or Pakistan to visit friends and family.

Of the 66 cases reported between 1/1/01 and 12/31/11:

- 48 (73%) were exposed during travel to endemic areas, including 41 with travel to Asia, 4 to Africa, 2 to Central or South America, and 1 to the Middle East. Among travelers to Asia, 31 (76%) had traveled to India or Pakistan during their exposure periods.
- 3 cases were in recent immigrants from typhoid endemic countries, including two from India and one from Nepal.
- 1 had occupational exposure in a laboratory.
- 6 were exposed in King County by an infected household contact.

Continued...

Pertussis activity continues to climb

Public Health received 36 reports of confirmed pertussis in February, an increase from 23 received in January. Of the cases received in January and February, immunization information was available for 57 cases: 32 (56%) were up to date on pertussis vaccine, 15 (26%) had received vaccine but were not up to date, and 10 (18%) had never been vaccinated against pertussis. Health care providers should continue to ensure their patients are up to date on pertussis immunization. Pertussis should be considered in the differential diagnosis of:

- Patients of any age with cough illness >2 weeks duration
- Patients with respiratory illness of any duration who have had contact with persons with a prolonged cough illness, or a confirmed pertussis case
- Infants <12 months of age with respiratory tract symptoms of any duration, even if they are immunized against pertussis or test positive for RSV

- 8 did not have a definitive risk factor identified, including the 2 cases described above. Some of the cases had traveled abroad, but outside the typical exposure period for typhoid fever.

Public health investigation

Our investigation uncovered that the two cases did not know each other, but dined at the same King County restaurant, though on different dates. Common foods were identified and were investigated as possible sources.

Public Health Environmental Health (EH) and Communicable Disease Epidemiology staff visited the restaurant. Several food code violations were found. All staff were screened for symptoms and risk factors for typhoid fever, and excluded from work until they submitted at least one stool sample that tested negative for S. Typhi. This exclusion requirement forced the restaurant to close until replacement workers from another store could be brought in. Food handling staff were required to submit an additional stool specimen.

All employees were also asked to submit serum for anti-Vi antibody testing. This test is useful for identifying long-term carriers of S. Typhi, but does not detect recent acute infection.

All test results were negative, and no employees with evidence of carriage or recent infection with S. Typhi were identified. However, S. Typhi excretion by carriers can be intermittent.

Recommendations

- Be aware that although most cases of typhoid fever in King County are among international travelers, locally acquired cases do occur.
- In a person with typhoid fever who has no history of travel, consider the possibility of an infected household contact.
- Persons infected with S. Typhi may not work as food handlers, work at or attend child care, or work as residential care or health care workers until they have 3 consecutive negative stool cultures beginning at east one month after illness onset.
- Counsel travelers to endemic areas about hand hygiene and avoiding risky foods and drink.
- Vaccinate international travelers against typhoid fever if their destination includes developing countries where exposure to contaminated food or drink is likely. The oral vaccine must be completed one week before travel to an endemic area, while the injectable vaccine must be given two weeks prior to travel. Booster doses may be recommended for persons at ongoing risk of infection.

Additional information is online at:
- www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/
- www.kingcounty.gov/health/cd - click "T" for typhoid fever

Disease Reporting

AIDS/HIV.....

(206) 296-4645

STDS.....

(206) 744-3954

TB.....

(206) 744-4579

All Other Notifiable

Communicable Diseases

(206) 296-4774

Automated reporting line for conditions

not immediately notifiable (24/7).....

(206) 296-4782

Hotline

Communicable Disease.....

(206) 296-4949

Online Resources

Home Page:

www.kingcounty.gov/health/cd

The EPI-LOG:

www.kingcounty.gov/health/epilog

Communicable Disease Listserv:

mailman.u.washington.edu/mailman/listinfo/phskc-info-x

Reported Cases of Selected Diseases, Seattle & King County 2011				
	Cases Reported in February		Cases Reported through February	
	2012	2011	2012	2011
Campylobacteriosis	22	26	38	47
Chlamydial infections	387	467	817	1008
Cryptosporidiosis	1	1	2	2
Giardiasis	8	19	22	27
Gonorrhea	78	95	190	219
Hepatitis A	2	3	4	4
Hepatitis B (acute)	0	0	0	0
Hepatitis B (chronic)	59	39	108	89
Hepatitis C (acute)	0	1	0	2
Hepatitis C (not acute, includes current and past infection)	111	103	224	226
Herpes, genital (primary)	43	44	103	103
HIV and AIDS (includes only AIDS cases not previously reported as HIV)	40	29	64	46
Legionellosis	1	1	1	4
Listeriosis	0	1	0	2
Measles	0	0	0	0
Meningococcal Disease	1	0	1	3
Mumps	0	0	0	0
Pertussis	36	1	58	4
Rubella (including congenital rubella)	0	0	0	0
Salmonellosis	19	7	33	19
Shiga toxin producing E. coli (STEC), including E. coli O157:H7 and non-O157)	2	1	6	5
Shigellosis	5	5	8	8
Syphilis	20	42	42	75
Syphilis, congenital	0	0	1	0
Syphilis, late	5	5	13	13
Tuberculosis	6	6	10	14
Vibriosis	0	0	0	0
Yersiniosis	5	0	6	1

The Epi-Log is available in alternate formats upon request.